

[THE NAME OF DOCUMENT]	SPECIFICATION
[TITLE OF THE INVENTION]	MULTIFUNCTION PORTABLE
TERMINAL	

[CLAIM]

[CLAIM 1] A multifunction portable terminal formed by connecting a main unit and a flip unit, which main unit having a communication function for wireless communication of an image and a voice, a microphone and a operation unit, which flip unit having a monitor which displays a image taken by a first and second photographic lenses and a screen for input operation, a speaker phone and a operation button, wherein

said main unit and said flip unit are connected by a rotatable axial unit so that said main unit and said flip unit can be relatively rotatable,

said flip unit is rotatable in the horizontal direction,

said portable terminal can be used as a video camera, a digital still camera and a TV telephone with a monitor, when said flip unit is turned in the horizontal direction.

[CLAIM 2] A multifunction portable terminal as set forth in Claim 1, including

a function of displaying the image taken by said first photographic lens and the image taken by said second photographic lens simultaneously on the monitor screen.

[CLAIM 3] A multifunction portable terminal as set forth in Claim 2, including

a function of switching the kind of an image to be taken by said photographic lens and said second photographic lens by operating said operation button of

said flip unit.

[CLAIM 4] A multifunction portable terminal as set forth in Claim 1, wherein

said monitor is a touch panel monitor.

[CLAIM 5] A multifunction portable terminal as set forth in Claim 1, wherein

said main unit comprising a storage unit which stores the taken moving image, the taken static image and the sound, and a function of transmitting the image and voice which were stored in advance.

[CLAIM 6] A multifunction portable terminal as set forth in Claim 1, wherein

said main unit comprising a storage unit which stores the taken moving image, the taken static image and the sound, and a interface for performing communication with an outward information processing device,

bidirectional data transfer is performed with the outward information device through said interface.

[CLAIM 7] A multifunction portable terminal as set forth in Claim 1, wherein

a function of enabling conversation using a microphone or a headphone, and the sound input/output terminal, when it is hard to catch the conversation by said speaker phone.

[CLAIM 8] A multifunction portable terminal as set forth in Claim 1, wherein

when said main unit and said flip unit are opened around said rotatable axial unit, the use as a ordinary portable telephone is possible.

[CLAIM 9] A multifunction portable terminal as set forth in Claim 1, wherein

when said main unit and said flip unit are opened

around said rotatable axial unit, only the flip unit is rotated across around the rotation axis at 180° in the horizontal direction and the flip unit is again combined with said main unit, the use as a pen input terminal is possible.

[DETAILED DESCRIPTION OF THE INVENTION]

[FIELD OF THE INVENTION]

The present invention relates to a portable terminal with a function of a TV telephone, and more particularly to a small-sized portable terminal with a function of a TV telephone.

[PRIOR ART]

(1) APPLICATION NUMBER: Japanese Patent Application No.5-73200 (Japanese Patent Publication Laid-Open (Kokai) No. Heisei 06-292195)

(2) APPLICATION NUMBER: Japanese Patent Application No.8-221366

[PROBLEMS TO BE SOLVED BY THE INVENTION]

In the conventional cellular phone, since only a user's own face projects on the other party, when showing the other party a surrounding scene, it is necessary to turn the photographic lens in the direction of the scene. Even if the cellular phone has a movable photographic lens, it is necessary to photo user's own face and scene by turns, and very inconvenient.

The reason is because the conventional cellular phone has one photographic lens and can photo only one object at once.

[OBJECT OF THE INVENTION]

In order to solve the above conventional problems, a first object of the present invention is to provide a portable terminal having a portable TV telephone, a digital video camera, and a digital still camera, without damaging the portability. Further, it is to provide a portable terminal provided with a touch panel capable of writing with a pen, and provided with full functions as for the data communication as well as the TV telephone.

[MEANS TO SOLVE THE PROBLEM]

According to the invention, a multifunction portable terminal formed by connecting a main unit and a flip unit, which main unit having a communication function for wireless communication of an image and a voice, a microphone and a operation unit, which flip unit having a monitor which displays a image taken by a first and second photographic lenses and a screen for input operation, a speaker phone and a operation button, wherein

said main unit and said flip unit are connected by a rotatable axial unit so that said main unit and said flip unit can be relatively rotatable,

said flip unit is rotatable in the horizontal direction,

said portable terminal can be used as a video camera, a digital still camera and a TV telephone with a monitor, when said flip unit is turned in the horizontal direction.

In the preferred construction, when said main unit and said flip unit are opened around said rotatable axial

unit, the use as a ordinary portable telephone is possible. Also, the flip unit can be rotated at 180°. In that case, it becomes possible to use the second speaker provided in the reverse side.

In another preferred construction, when said main unit and said flip unit are opened around said rotatable axial unit, only the flip unit is rotated across around the rotation axis at 180° in the horizontal direction and the flip unit is again combined with said main unit, the use as a pen input terminal is possible.

#### [OPERATION]

While taking the image shown to a partner by the first photographic lens provided in the rotation axis, one's own image can be taken by the second photographic lens provided in the flip unit. Also, the image transmitted to a communication link partner can be easily changed by operating the operation button of the flip unit.

#### [THE EMBODIED CONFIGURATION OF THE INVENTION]

##### [DESCRIPTION OF THE CONFIGURATION]

The preferred embodied configuration of the present invention will be discussed hereinafter in detail with reference to the accompanying drawings.

With reference to Figs. 1 and 2, in the portable terminal of the embodied configuration of the present invention, a main unit 1 and a flip unit 2 are connected in a movable way through rotation axes 3-a, 3-b. The rotation axis 3-a is connected to the portable terminal so that the main unit and the flip unit can be relatively rotatable, and the rotation axis 3-b is connected there in a rotatable way in the vertical direction across the rotation of the

rotation axis 3-a.

The flip unit 2 is inside provided with a monitor with a touch panel 4, an operation button 5 for switching a screen, a photographic lens 6-b for a TV telephone and a speaker phone 7. The speaker 13 is formed in the position symmetrical to the speaker phone 7 on the reverse side of the flip unit.

With reference to Fig. 3, the main unit is inside provided with an operation key 18 for inputting a telephone number, a moving image/static image switch 17 for switching the kind of an image to be taken and a microphone 19. Further it is provided with a strobe 15 and a button 14 for taking an image on one side thereof, and it is provided with a zoom button 8, a data input/output terminal 9, a dummy plug for data output, and a sound input/output terminal 11 on the other side thereof as illustrated in Figs. 1 and 2.

Further, a photographic lens 6-a for a digital camera is provided on one end of the rotation axis 3-a and an operation dial 12 is provided on the other end thereof.

Fig. 5 shows an input pen 20 used at a time of pen input.

#### [DESCRIPTION OF THE OPERATION]

Next, the operation of the embodied configuration of the present invention will be discussed hereinafter in detail with reference to the accompanying drawings.

Fig. 4 is view showing the state of folding the multifunction portable terminal of the embodied configuration when it is not used. When it is not used, the main unit 1 and the flip unit 2 are folded around the rotation axis 3-a as illustrated in Fig. 4. In the case of

using it as a TV telephone, the main unit 1 and the flip unit 2 are opened to a position of turning them to an L-shape around the rotation axis 3-a, and then, the flip unit 2 is turned across at 90° in the horizontal direction. A phone call is made by using the operation key 18 in the same way as the ordinal portable telephone. Conversation is made through the speaker phone 7. It is also possible to use the portable terminal by connecting a microphone or a headphone to the sound input/output terminal 11. The screen on the touch panel monitor 4 can show an image taken by the photographic lens 6-a, 6-b at use. It is possible to operate the operation button 5 so to variously switch a screen to be displayed on the touch panel monitor 4. As a form of displaying these images, there may be considered a first form of displaying the image taken by the photographic lens 6-a on the whole screen of the touch panel monitor 4 and further displaying the image taken by the photographic lens 6-b small with it overlapped on the arbitrary positions of the monitor screen as a child screen as illustrated in Fig. 6. There may be considered a second form of displaying the image taken by the photographic lens 6-b on the whole screen of the touch panel monitor 4 and further displaying the image taken by the photographic lens 6-a small with it overlapped on the arbitrary positions of the monitor screen. In the first and second displaying forms, the size of a child screen can be changed into a desired size by operation of the touch panel and the input pen 20. In a third displaying form, the image taken by the photographic lens 6-a is displayed on the whole screen of the touch panel monitor 4. Also, in a fourth displaying form, the image taken by the photographic lens 6-b is displayed on the whole screen of the touch panel monitor 4.

Next, in the case of using it as a digital video camera, it is used in the same form as in the case of the above-mentioned TV telephone. A user sets the moving image/static image switch 17 shown in Fig. 5 for the moving image, thereby deciding on the moving image as for the kind of the image to be taken. The size of the image to be taken is adjusted by using the zoom button 8 and press of the button 14 for taking an image starts taking. Also it is possible to take an image in the state of fixing the portable terminal to a tripod by use of a tripod fixing hole 16. The taken image is stored in the built-in storage medium and it can be read out and reproduced any time.

In the case of using it as a digital still camera, it is used in the same form as in the case of the above-mentioned TV telephone. A user sets the moving image/static image switch 17 shown in Fig. 5 for the static image, thereby deciding on the static image as for the kind of the image to be taken. In this case, the button 14 for taking an image takes a role of a shutter and by using this button an image is taken. Also it is possible to take an image in the state of fixing the portable terminal to a tripod by use of a tripod fixing hole 16. The taken image is stored in the built-in storage medium and it can be read out and reproduced any time.

In the case of using it as a pen input terminal, the main unit 1 and the flip unit 2 are opened around the rotation axis 3-a at 360°, and then the outside of the main unit 1 is combined with the outside of the flip unit 2. Alternatively, once opening the main unit 1 and the flip



unit 2 to any position around the rotation axis 3-a, only the flip unit 2 is rotated across around the rotation axis 3-b at 180° in the horizontal direction and the flip unit 2 is again combined with the main unit 1 around the rotation axis 3-a, to be shown in the state of Fig. 5.

In the case of using it as the ordinary portable telephone, the main unit 1 and the flip unit 2 are opened around the rotation axis 3-a to any position as illustrated in Fig. 4, thereby enabling the communication.

When the stored data is transmitted to an outside information processing terminal of a personal computer, the dummy plug 10 for data input/output terminal is extracted from the data input/output terminal 9 shown in Fig. 1 and instead of it, a connection cable is inserted therein. The other end of the connection cable is connected to the information processing terminal, thereby enabling data input/output.

[THE OTHER EMBODIED CONFIGURATION OF THE INVENTION]

The other embodied configuration of the present invention will be described with reference to Fig. 6.

In the portable terminal of this embodied configuration, a second speaker is provided on the opposite side of the speaker phone in the flip unit 2. Accordingly, in the case of using it as a portable telephone, it can be used with the outside of the flip unit facing to the inside of the main unit, by turning the flip unit 2 around the rotation axis 3-b at 180°. In this case, a user's cheek doesn't come into contact with the touch panel monitor 4 when using it as the ordinal portable telephone, thereby

enabling conversation without dirtying the surface of the monitor.

[THE EFFECT OF THE INVENTION]

As a first effect, in the case of using the portable terminal as a TV telephone, it is possible to transmit a user's own face and the scene of the user's view to a communication party at ease and at once.

This is because the portable terminal of the present invention is provided with two photographic lenses and a switch, thereby to transmit the images at an easy operation.

As a second effect, it is possible to provide a portable terminal capable of various operations of a moving image, a static image, a character mail, a portable telephone and the like.

This is because it is provided with two rotation axes capable of setting any angle, thereby to cope with various uses.

As a third effect, it is possible to transfer the taken image to an information processor such as a personal computer at ease or to transfer the image from the personal computer to the side of a portable terminal.

This is because it is provided with a data input/output interface, thereby enabling connection to the other device at ease without passing through the storing medium such as a memory card.

[BRIEF DESCRIPTION OF THE DRAWINGS]

[Fig. 1] Fig. 1 is a view showing the case of using the functions of a video camera, a digital still camera and a TV telephone in a portable terminal according to a first embodied configuration of the present invention.

[Fig. 2] Fig. 2 is a rear elevation view of the portable terminal of Fig. 1.

[Fig. 3] Fig. 3 is a view showing the case of using a function of a portable telephone, in the portable terminal according to the present invention.

[Fig. 4] Fig. 4 is a view showing the embodiment in the case of folding up and carrying the portable terminal according to the present invention.

[Fig. 5] Fig. 5 is a view showing the case of using a function of pen input, in the portable terminal according to the present invention.

[Fig. 6] Fig. 6 is a view showing the other embodiment of portable terminal according to the present invention.

[THE DESCRIPTION OF THE NUMERALS]

- |     |   |
|-----|---|
| 1   | main unit   |
| 2   | flip unit   |
| 3-a | rotation axis (for opening/shutting of the flip unit) |
| 3-b | rotation axis (for rotation of the flip unit)         |
| 4   | touch panel monitor                                   |
| 5   | operation button                                      |
| 6-a | photographic lens a                                   |
| 6-b | photographic lens b                                   |
| 7   | speaker phone   |
| 8   | zoom button   |
| 9   | data input/output terminal                            |
| 10  | dummy plug for data input/output terminal             |
| 11  | sound input/output terminal                           |

12	operation dial
13	speaker
14	button for taking an image
15	strobe
16	tripod fixing hole
17	moving image/static image switch
18	operation key
19	microphone
20	input pen

[THE NAME OF DOCUMENT] ABSTRACT

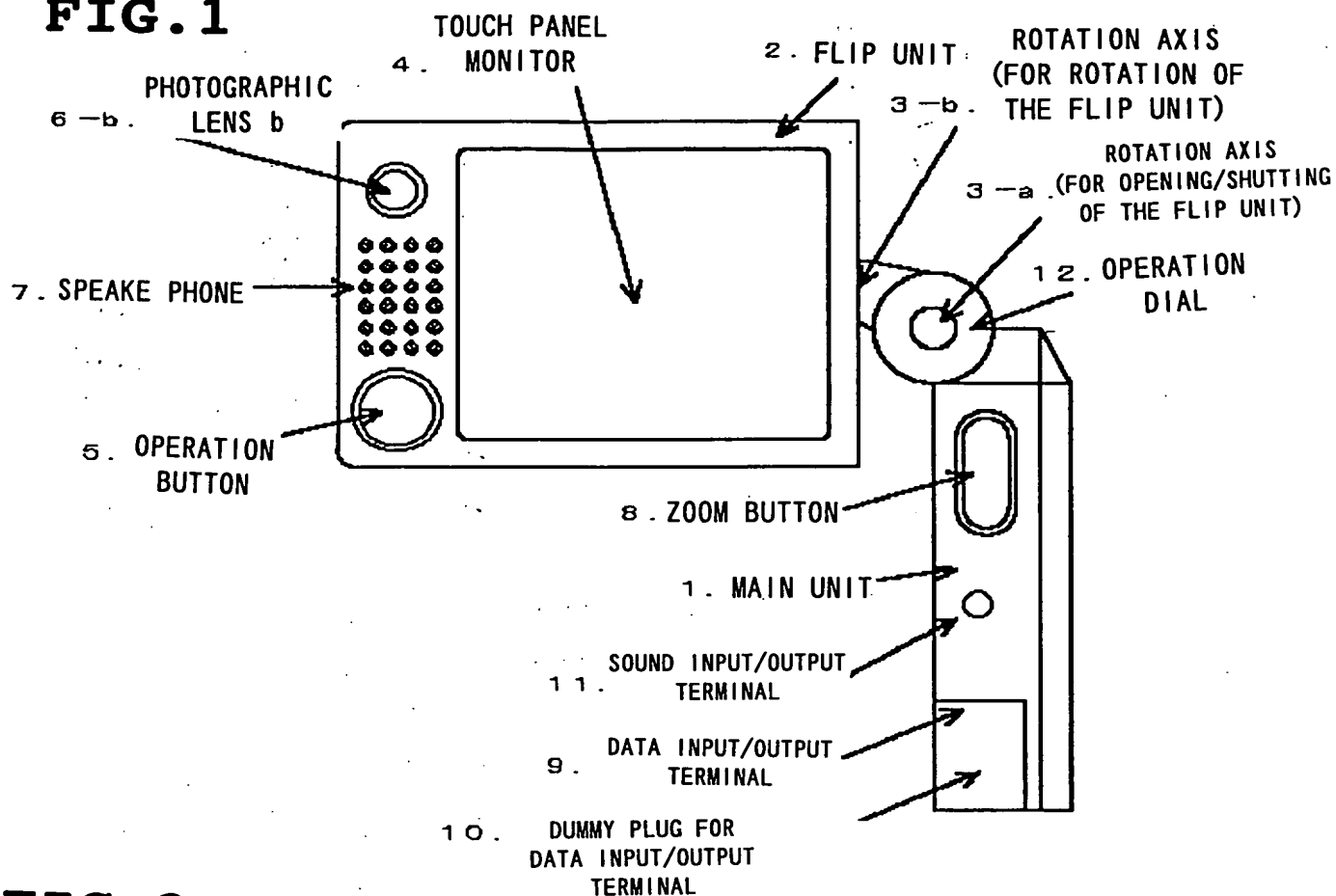
[ABSTRACT]

[OBJECT] The present invention provides a portable terminal having a portable TV telephone, a digital video camera, and a digital still camera, without damaging the portability and makes it possible to transmit a user's own face and the scene of the user's view to a communication party at ease and at once.

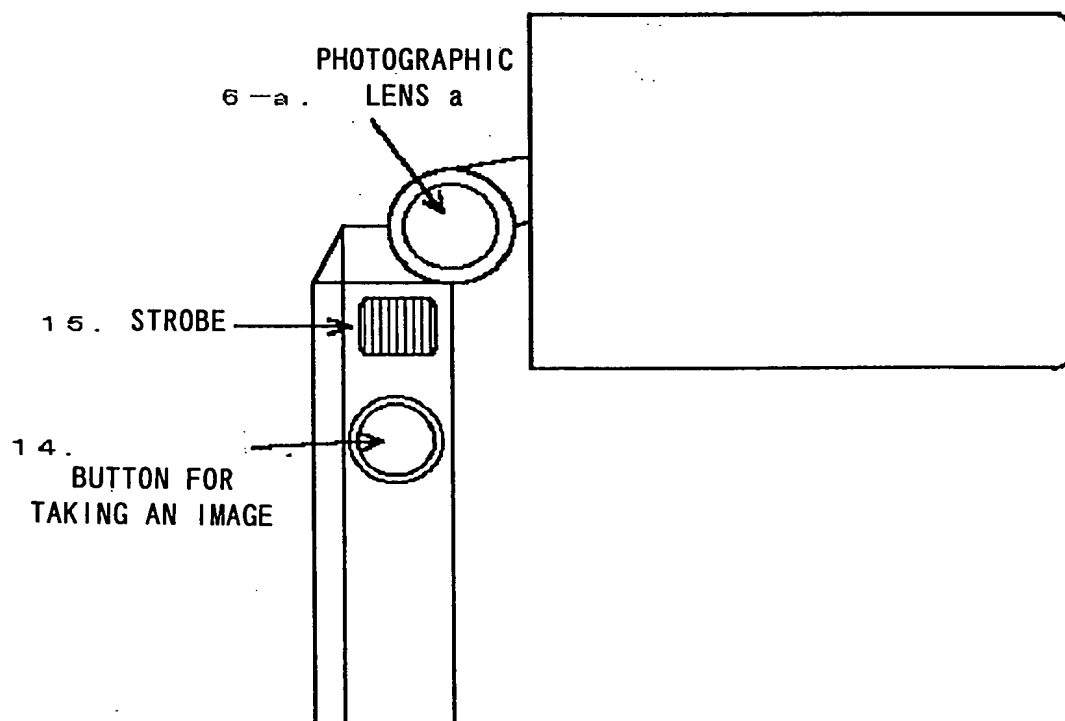
[CONSTITUTION] The portable terminal comprises a main unit and a flip unit. The main unit includes a microphone, an operation key, a communication unit for wireless communication of an image and a voice. The flip unit includes an axial unit having a video camera and operation dial, a touch panel monitor which displays a image taken by the video camera and has a touch panel function, a CCD camera, speaker and operation button. The rotation axis is connected to the portable terminal so that the main unit and the flip unit can be relatively rotatable, and the rotation axis is connected there in a rotatable way in the vertical direction across the rotation of the rotation axis. The portable terminal functions as a video camera with a monitor, when the flip unit is opened and rotated in a transverse direction.

[SELECTED DRAWING] Fig. 1

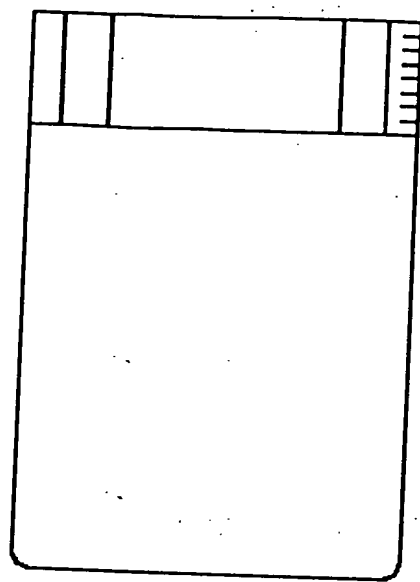
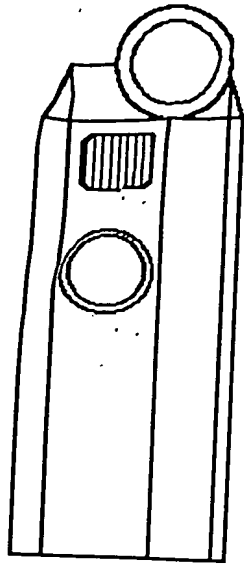
# FIG. 1



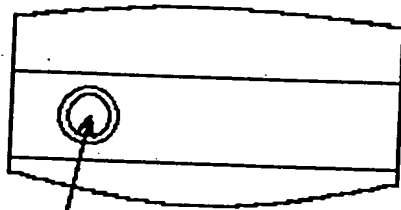
# FIG. 2



**FIG. 3**

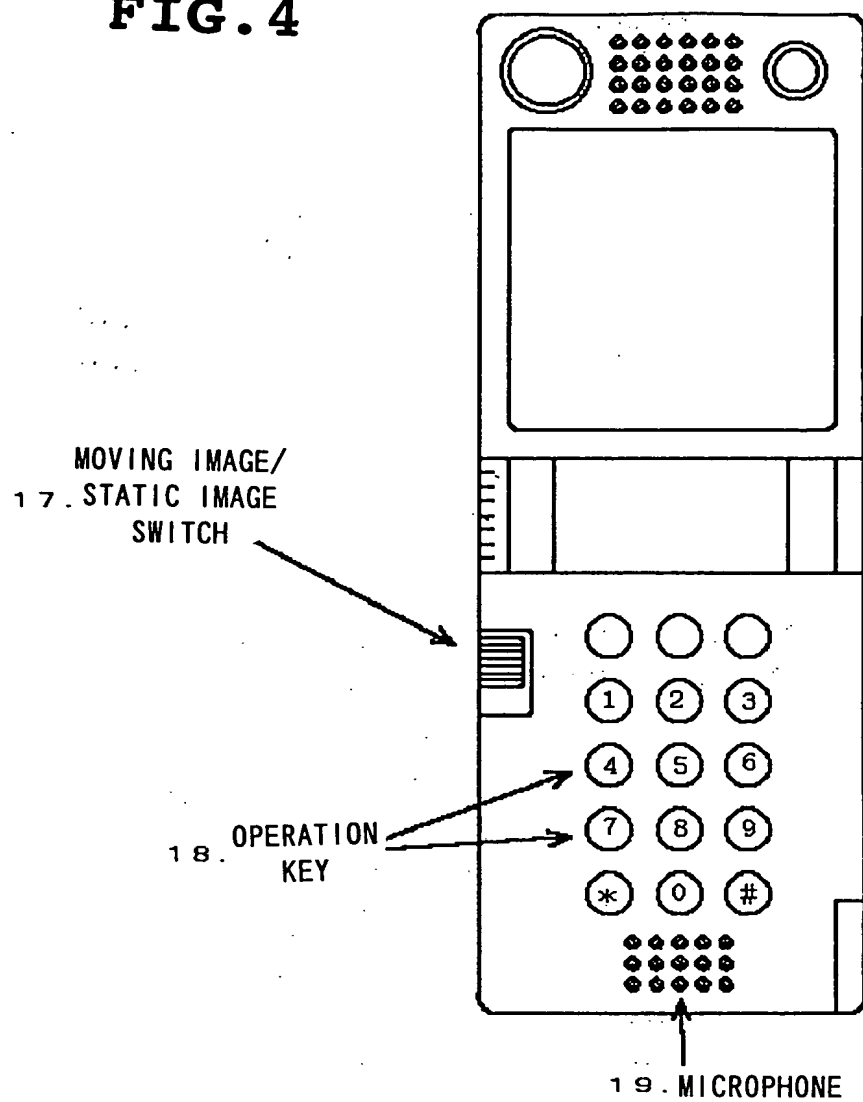


12. OPERATION  
DIAL

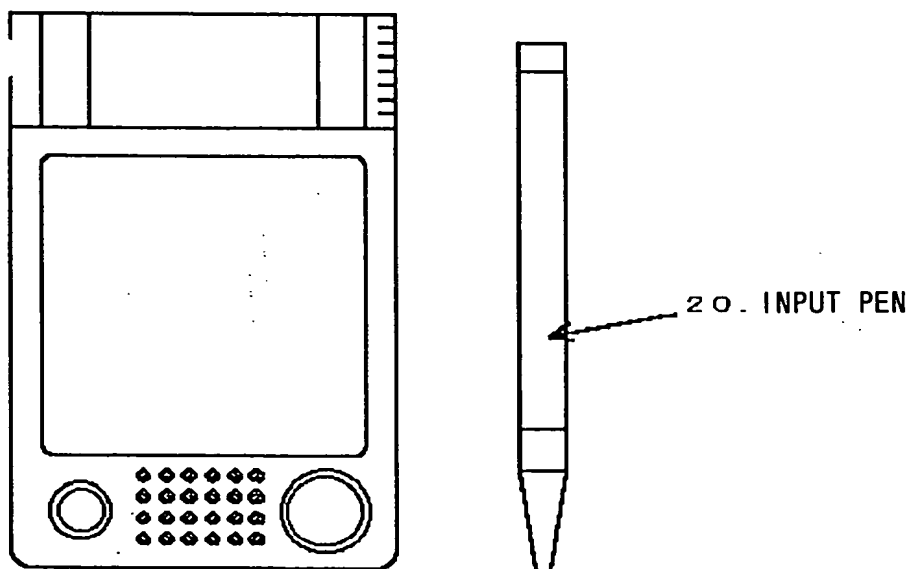


16. TRIPOD FIXING HOLE

**FIG. 4**



**FIG. 5**





**FIG. 6**

